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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,672

02/20/2007

Alexander Shendi

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04/28/2009

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HUNTINGTON, NY 11743

EXAMINER

MOK, ALEX W

ART UNIT

PAPER NUMBER

2834

MAIL DATE

DELIVERY MODE

04/28/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/583,672		SHENDI, ALEXANDER	
	Examiner		Art Unit	
	ALEX W. MOK		2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/4/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: A_{Zh} , D_A , A_J , $D_{yoke,min}$ (figure 4), M_{th} , H_r (figure 7). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 7 and 9-12 are objected to because of the following informalities: the term "the slot fill factor (F)" in claim 7 does not have proper antecedent basis in the claim; and the terms "the tooth sides (59)", "the tooth head contours (65)", and "the yoke contour (62)" in claim 12 also do not have proper antecedent basis in the claim. Also,

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the term (c3) in claims 9 and 11 and the term (c2) in claims 10 and 11 are not defined in the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asao et al. (European Patent Document No.: EP 1353431 A1), and further in view of Ojo ("Multiobjective optimum design of electrical machines for variable speed motor drives", article, IEEE, published Sept. 28-Oct. 4, 1991, pages 163-168).

For claim 1, Asao et al. disclose a stator for an electrical machine which comprises at least one stator iron (reference numeral 36, figure 25) and the stator iron has a substantially annular-cylindrical shape (see figures 17, 18, 28), and in which the stator iron has an axial direction which is oriented in the direction of a cylinder axis, and the stator iron has an end face which is oriented in the direction of the cylinder axis and defines a slot area (reference numeral 36a, figures 25-28). Asao et al. do not specifically teach a ratio A formed of the slot area and the end face area that amounts to between 0.4 and 0.8. Ojo discloses a stator which has variables representing the different dimensions of the stator slot (see figure 1), and it would have been obvious to a person of ordinary skill to adjust these variables of the stator slot in order to have the

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ratio for the slot area and end face area as claimed since Ojo discloses optimizing the design of the stator (see pages 163-166), the same problem the claimed invention is concerned with. Also the limitation of the stator being made by the flat-packet technique is a process limitation which is not given patentable weight in an apparatus claim.

For claim 2, it still would have been obvious to have the ratio A be between 0.4 and 0.7 for the same reasons given above for claim 1.

For claim 3, the reference of Asao et al. teaches the claimed invention but does not specifically disclose the stator having forty-eight inner teeth, nor the ratio A amounting to between 0.45 and 0.70. It still would have been obvious to have these features, since it would have been within the knowledge of a person of ordinary skill to have a certain amount of teeth for the stator for design purposes of the invention, and it also would have been obvious to have the range for the ratio as claimed for the same reasons given for claim 1.

For claim 4, it still would have been obvious to have the ratio A be between 0.45 and 0.60 for the same reasons given for claim 1.

For claim 5, the reference of Asao et al. teaches the claimed invention but does not specifically disclose the stator having thirty-six inner teeth, nor the ratio A amounting to between 0.4 and 0.6. It still would have been obvious to have these features, since it would have been within the knowledge of a person of ordinary skill to have a certain amount of teeth for the stator for design purposes of the invention, and it also would have been obvious to have the range for the ratio as claimed for the same reasons given for claim 1.

For claim 6, it still would have been obvious to have the ratio A be between 0.40 and 0.55 for the same reasons given for claim 1.

For claim 7, Asao et al. teach the claimed invention except for the slot fill factor (F) amounting to between 50% and 80%. Since Ojo discloses the variables of the different dimensions of the stator slot as explained for claim 1 above, it would have been obvious for a person of ordinary skill to adjust these dimensions to acquire the desired slot fill factor for the purposes of optimizing the design of the stator.

For claim 8, it would have been obvious to have the slot fill factor F amount to between 60% and 70% for the same reasons given for claim 7.

For claim 9, Asao et al. disclose the slot having a contour which is defined toward the yoke by diametrically opposed tooth sides (see figure 26, reference numeral 36a) and a yoke contour, and the tooth sides of a slot having a spacing from one another in the circumferential direction (figure 26); and that a slot pitch being the spacing between two directly adjacent tooth centers of the stator iron at the diameter of the spacing. Asao et al. do not specifically disclose c3 amounting to between 0.45 and 0.65. Since Ojo discloses the variables of the different dimensions of the stator slot as explained for claim 1 above, it would have been obvious for a person of ordinary skill to adjust the spacing and slot pitch dimensions to acquire the desired ratio range for the purposes of optimizing the design of the stator.

For claim 10, Asao et al. disclose the slot having a contour which is defined toward the tooth head by diametrically opposed tooth sides (see figure 26, reference numeral 36a) and tooth head contours (figure 26), and the tooth sides of a slot, at the

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transition to the tooth head contours, having a spacing from one another in the circumferential direction (see figure 26); and that a slot pitch being the spacing between two directly adjacent tooth centers at the diameter of the spacing of the stator iron.

Asao et al. do not specifically disclose c_2 amounting to between 0.45 and 0.65. Since Ojo discloses the variables of the different dimensions of the stator slot as explained for claim 1 above, it would have been obvious for a person of ordinary skill to adjust the spacing and slot pitch dimensions to acquire the desired ratio range for the purposes of optimizing the design of the stator.

For claim 11, although Asao et al. do not specifically teach c_2 amounting to between 0.50 and 0.60 and (c_3) amounting to between 0.47 and 0.60, it still would have been obvious to have this ratio since it would involve merely changing the dimensions of the stator slot, the same reasons given for claim 1.

For claim 12, Asao et al. disclose a rounded shape around the sides of the slot (see figure 26), i.e. the tooth sides changing over by means of rounded transitions to the tooth head contours and the yoke contour, but do not specifically teach the radii amount to be between 0.3 mm and 2.0 mm. It would have been obvious to have this range for the same reasons given above for claim 1.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references disclose embodiments for stator core

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teeth: Lindbery et al. (US 20020074892 A1, US 6611076), Bradfield
(US 2002/0117929 A1).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX W. MOK whose telephone number is (571)272-9084. The examiner can normally be reached on 7:30-5:00 Eastern Time, 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen P. Leung can be reached on (571) 272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quyen Leung/
Supervisory Patent Examiner, Art Unit 2834

/A. W. M./
Examiner, Art Unit 2834

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